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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,407	02/19/2002	Tetsushi Abe	219800US2	2132
22850	7590	08/23/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			BOCURE, TESFALDET	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 08/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/076,407

Applicant(s)

ABE ET AL.

Examiner

Tesfaldet Bocure

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-35 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 February 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 4/03 & 2/05.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The Information Disclosure Statements (IDSs 1449) received on April 25, 2003 and Feb. 14, 2005 have been accepted by the Examiner and the initialed copies (two copies) of the 1449 are attached with this correspondence.

Drawings

2. Figures 30A, 30B and 31 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

It should be noted that figures 30A, 30B and 31 have been disclosed as convention drawing.

Allowable Subject Matter

3. Claims 1-35 are allowed.

4. The following is an examiner's statement of reasons for allowance: The claimed subject matter in claims 1-35 is allowable because the arts of record fail to teach or

Art Unit: 2631

fairly suggest the claimed "a Turbo reception method and apparatus comprising: calculating a channel value $h_m(q)$ and a channel matrix H from M received signals where M is an integer equal to or greater than 1) and a known signal, where $m=1\text{---}M$; $n=1\text{---}N$ and $q=0\text{---}Q-1$, and Q represents a number of multipaths of each transmitted wave, and in combination with the claimed steps for determining, using the channel value $h_m(q)$, subtracting the interference, using the channel matrix H and filtering the difference in claims 1,3,9,10 (in addition the step for defining a covariance matrix in claims 9 and 10), 20 (in addition means for replica matrix generator and received matrix generator in claim 20) and 21 (in addition the N decoder in claim 21); in combination of the claimed received signal generator, channel estimator, prestage equalization and plurality of poststage equalizers in claims 22 and 23; and determining the certainty of a decoded hard decision information signal on the basis of a value of a corresponding soft decision information symbol, and using a hard decision information symbol having a certainty which is in excess of a given value in the channel estimation of a next iteration as a reference signal as in claims 28 and 35."

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Publication numbers US 22002/0167998A1 and US 2005/0018794 to Penther and Tang et al., US patent number 6,813,219 and 6,819,630 issued to Blackmon and Blackmon et al., PCT publication number WO 03/092170 issued to Otnes et al., and IEEE publications "Optimization of LDPC_Coded Turbo CDMA System," "Reduced Complexity In-Phase/Quadrature-Phase M-QAM Turbo Equalization Using Iterative Channel Estimation" and "Turbo Equalization and New Result" to Wang et al., Bee Leon Yeap et al. and Michael et al. respectively disclose a literarily updating decoder and channel estimation.

6. This application is in condition for allowance except for the following formal matters:

The objection to the drawings indicated in the second paragraph above.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tesfaldet Bocure whose telephone number is (571) 272-

Art Unit: 2631

3015. The examiner can normally be reached on Mon-Thur (7:30a-5:00p) & Mon.-Fri (7:30a-5:00p).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad H. Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

T.Bocure

T. Bocure
Primary Examiner
Art Unit 2631

